

217/782-2113

CONSTRUCTION PERMIT - NSPS SOURCE

PERMITTEE

Fagerdala USA - Mendota
Attn: David Emanuel
605 12th Street
Mendota, Illinois 61342

Application No.: 06030031 I.D. No.: 099055ABD
Applicant's Designation: Date Received: March 8, 2006
Subject: Polystyrene Beads Manufacturing and Package Molding
Date Issued: TO BE DETERMINED
Location: 605 12th Street, Mendota

This Permit is hereby granted to the above-designated Permittee to CONSTRUCT emission source(s) and/or air pollution control equipment consisting of a new molding process and modification to the resin process, modification to the EPS bulk additive process, modification to the EPS cement process, and modification to the boilers, as described in the above-referenced application. This Permit is subject to standard conditions attached hereto and the following special condition(s):

1.1 Boilers

1.1.1 Description

Boilers provide steam used for process temperature control and throughout the process areas for comfort heating.

1.1.2 List of Emission Units and Air Pollution Control Equipment

| Emission Unit | Description | Emission Control Equipment |
|---------------|--|----------------------------|
| EU-5 B1 | Natural Gas-Fired Boiler (32.7 mmBtu/hr) | None |
| EU-5 B2 | Natural Gas-Fired Boiler (25.1 mmBtu/hr) | None |

1.1.3 Applicable Provisions and Regulations

- a. The "affected boilers" for the purpose of these unit-specific conditions, are the boilers described in Conditions 1.1.1 and 1.1.2.
- b. The affected boilers are subject to New Source Performance Standards (NSPS) for Small Industrial-Commercial-Institutional Steam Generating Units, 40 CFR 60, Subparts A and Dc. The Illinois EPA is administering these standards in Illinois on behalf of the United States EPA under a delegation agreement.

- i. The affected boilers only burn gaseous fuel; therefore, they are only subject to the following requirements under the NSPS:

The owner or operator of an affected facility that only burns very low sulfur fuel oil or other liquid or gaseous fuels with potential sulfur dioxide emissions rate of 140 ng/J (0.32 lb/MMBtu) heat input or less shall record and maintain records of the fuels combusted during each calendar month [40 CFR 60.48c(g)].

- c. The Permittee shall not cause or allow the emission of carbon monoxide (CO) into the atmosphere from any fuel combustion emission source with actual heat input greater than 2.9 MW (10 mmBtu/hr) to exceed 200 ppm, corrected to 50 percent excess air [35 IAC 216.121].

1.1.4 Non-Applicability of Regulations of Concern

Non-applicability of regulations of concern are not set for the affected boilers.

1.1.5 Control Requirements and Work Practices

Control requirements and work practices are not set for the affected boilers.

1.1.6 Production and Emission Limitations

- a.
 - i. The maximum rated firing capacity of the affected boilers (combined) shall not exceed 57.8 mmBtu/hr.
 - ii Natural gas shall be the only fuel fired in the affected boilers.
- b. Emissions from the affected boilers (combined) shall not exceed the limits:

| Pollutant | Emissions | |
|-----------------|-----------|-----------|
| | (Tons/Mo) | (Tons/Yr) |
| NO _x | 2.2 | 25.4 |
| CO | 1.8 | 21.3 |
| PM | 0.2 | 2.0 |
| VOM | 0.2 | 1.4 |
| SO ₂ | 0.1 | 0.2 |

- c. Compliance with annual limits shall be determined on a monthly basis from a running total of 12 months of data.

1.1.7 Testing Requirements

Testing requirements are not set for the affected boilers.

1.1.8 Monitoring Requirements

Monitoring requirements are not set for the affected boilers.

1.1.9 Recordkeeping Requirements

- a. The Permittee shall comply with the applicable reporting and recordkeeping requirements in 40 CFR 60.48c.
- b. The Permittee shall maintain records of the NO_x, CO, VOM, PM/PM₁₀ and SO₂ emissions (tons/month and tons/year).

1.1.10 Reporting Requirements

a. Reporting of Deviations

The Permittee shall promptly notify the Illinois EPA, Air Compliance Unit, of deviations of the affected boilers with the permit requirements as follows. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken.

1.1.11 Operational Flexibility/Anticipated Operating Scenarios

Operational flexibility is not set for the affected boilers.

1.1.12 Compliance Procedures

- a. Compliance with the emission limits in Condition 1.1.6 is addressed by the records required in Condition 1.1.9 and the emission factors and formulas listed below:

- i. A. Emission factors for the affected boiler when fired by natural gas:

| Emission Factors | |
|------------------|-------------------|
| <u>Pollutant</u> | <u>(lb/mmscf)</u> |
| VOM | 5.5 |
| PM | 7.6 |
| SO ₂ | 0.6 |
| NO _x | 100 |
| CO | 84 |

The emission factors (lb/mmscf) are for Natural Gas-Fired Small Boilers (<100 mmBtu/hr Heat Input) from AP-42 Section 1.4 (dated 3/98).

- B. Emission formula for the affected boiler when fired by natural gas:

(Boiler Emissions, lb) = (The Appropriate Emission Factor, lb/mmscf) x (Natural Gas Usage, mmscf)

1.2 Process Sources

1.2.1 Description

EU2 - Resin Process

Polystyrene beads are conveyed and charged into reactors with water, additives and then pentane blowing agent. The tank is pressurized and heated. The slurry from the reactors is dewatered, dried and stored.

EU3 - EPS Bulk Additive

Polystyrene beads are expanded and mixed with wet and dry chemicals to produce Expanded Polystyrene (EPS) bulk additive.

EU4 - EPS Cement Process

Polystyrene beads are expanded and mixed with cement to produce EPS cement.

EU7 - Molding Process

Polystyrene beads are expanded and molded into polystyrene packaging. The cured bead is formed into packaging parts, coolers, or helmet liners in molding machines.

1.2.2 List of Emission Units and Air Pollution Control Equipment

| Emission Unit | Description | Emission Control Equipment |
|---------------|--------------------|----------------------------|
| EU-2 | Resin Process | None |
| EU-3 | EPS Bulk Additive | None |
| EU-4 | EPS Cement Process | None |
| EU-7 | Molding Process | None |

1.2.3 Applicable Provisions and Regulations

- a. The "affected units" for the purpose of these unit-specific conditions, are the units described in Conditions 1.2.1 and 1.2.2.
- b. No person shall cause or allow the discharge of more than 3.6 kg/hour (8 lbs/hour) of organic material into the atmosphere from any emission unit, except as provided in 35 IAC 215.302, 215.303, 215.304 and the following exception: If no odor nuisance exists the limitation of this subpart shall apply only to photochemically reactive material [35 IAC 215.301].

1.2.4 Non-Applicability of Regulations of Concern

Non-applicability of regulations of concern are not set for the affected units.

1.2.5 Control Requirements and Work Practices

Control requirements and work practices are not set for the affected units.

1.2.6 Production and Emission Limitations

- a. i. The maximum bead production shall not exceed 420,000 pounds/month and 4,200,000 pounds/year for the Resin Process (EU-2).

- ii. VOM emissions from Resin Process (EU-2) shall not exceed 2.0 tons/month and 20.6 tons/year.

- b. i. Operation of the EPS Bulk Additive (EU-3) shall not exceed the following limits:

| Polystyrene Resin Usage (Ton/Mo) (Ton/Yr) | | VOM Content (wt. %) | Styrene Content (wt. %) |
|--|-----|------------------------|----------------------------|
| 82 | 836 | 7.0 | 0.1 |

- ii. Emissions of VOM and HAP (styrene) from the EPS Bulk Additive (EU-3) shall not exceed the following limits:

| VOM Emissions (Ton/Mo) (Ton/Yr) | | HAP Emissions (Ton/Mo) (Ton/Yr) | |
|------------------------------------|------|------------------------------------|------|
| 5.9 | 58.5 | 0.1 | 0.84 |

- iii. Compliance with annual limits shall be determined on a monthly basis from a running total of 12 months of data.

- c. i. Operation of the EPS Cement Process (EU-4) shall not exceed the following limits:

| Polystyrene Resin Usage (Ton/Mo) (Ton/Yr) | | VOM Content (wt. %) | Styrene Content (wt. %) |
|--|-----|------------------------|----------------------------|
| 82 | 836 | 7.0 | 0.1 |

- ii. Emissions of VOM and HAP (styrene) from the EPS Bulk Additive (EU-3) shall not exceed the following limits:

| VOM Emissions (Ton/Mo) (Ton/Yr) | | HAP Emissions (Ton/Mo) (Ton/Yr) | |
|------------------------------------|------|------------------------------------|------|
| 5.9 | 58.5 | 0.1 | 0.84 |

- iii. Compliance with annual limits shall be determined on a monthly basis from a running total of 12 months of data.

- d. i. Operation of the Molding Process (EU-7) (all molding machines combined) shall not exceed the following limits:

| Polystyrene Resin Usage (Ton/Mo) (Ton/Yr) | | VOM Content (wt. %) | Styrene Content (wt. %) |
|--|--|------------------------|----------------------------|
| | | | |

| | | | |
|-----|-------|-----|-----|
| 120 | 1,200 | 7.0 | 0.1 |
|-----|-------|-----|-----|

- ii. Emissions of VOM and HAP (styrene) from the Molding Process (EU-7) shall not exceed the following limits:

| VOM Emissions (Ton/Mo) (Ton/Yr) | | HAP Emissions (Ton/Mo) (Ton/Yr) | |
|------------------------------------|------|------------------------------------|-----|
| 8.4 | 84.0 | 0.1 | 1.2 |

- iii. Compliance with annual limits shall be determined on a monthly basis from a running total of 12 months of data.

- d. This permit is issued based on negligible emissions of particulate matter from the resins and beads storage, two extrusion lines, molding operations, cement silo, cement/polystyrene beads mixer and bag filling line. For this purpose emission from each emission source shall not exceed nominal emission rates of 0.1 lb/hour and 0.44 tons/year.

1.2.7 Testing Requirements

Testing requirements are not set for the affected units.

1.2.8 Monitoring Requirements

Monitoring requirements are not set for the affected units.

1.2.9 Recordkeeping Requirements

The Permittee shall maintain records of the following items for the affected units:

- The name, identification number, usage (tons/month and tons/year) and VOM and HAP (styrene) content (wt. %) of each raw material used at the facility.
- The beads palletizing batches number and size for each type of beads produced and initial batch composition (wt. %).
- The most recent detailed records of measurements of pentane content in the beads produced.
- Bead production (pounds/month and pounds/year).
- VOM and HAP emissions calculations (tons/month and tons/year).
- Cement usage (tons/month and tons/year).

1.2.10 Reporting Requirements

- Reporting of Deviations

The Permittee shall promptly notify the Illinois EPA, Air Compliance Unit, of deviations of the affected units with the permit requirements as follows. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken.

1.2.11 Operational Flexibility/Anticipated Operating Scenarios

Operational flexibility is not set for the affected units.

1.2.12 Compliance Procedures

- a. Emissions from the affected units shall be determined by the recordkeeping requirements in Condition 1.2.9 and a material balance calculation.

1.3 Components

1.3.1 Description

Leaks may occur from components such as valves and connectors.

1.3.2 List of Emission Units and Air Pollution Control Equipment

| Emission Unit | Description | Emission Control Equipment |
|---------------|---|----------------------------|
| EU-6 | Fugitive components (Valves and Connectors) | None |

1.3.3 Applicable Provisions and Regulations

- a. The "affected components" for the purpose of these unit-specific conditions, are the components described in Conditions 1.3.1 and 1.3.2.

1.3.4 Non-Applicability of Regulations of Concern

Non-applicability of regulations of concern are not set for the affected components.

1.3.5 Control Requirements and Work Practices

Control requirements and work practices are not set for the affected components.

1.3.6 Production and Emission Limitations

- a. VOM emissions from the affected components shall not exceed 16.43 ton/yr.

1.3.7 Testing Requirements

Testing requirements are not set for the affected components.

1.3.8 Monitoring Requirements

Monitoring requirements are not set for the affected components.

1.3.9 Recordkeeping Requirements

- a. The Permittee shall maintain records of the following items for affected components:
 - i. Number of components by type.
 - ii. Calculated VOM emissions including supporting calculations, attributable to these components determined in accordance with Condition 1.3.12 (tons/year).

1.3.10 Reporting Requirements

a. Reporting of Deviations

The Permittee shall promptly notify the Illinois EPA, Air Compliance Unit, of deviations of the affected components with the permit requirements as follows. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken.

1.3.11 Operational Flexibility/Anticipated Operating Scenarios

Operational flexibility is not set for the affected components.

1.3.12 Compliance Procedures

- a. Emissions of VOM from the affected components shall be calculated using emission factors provided in Emission Inventory Improvement Program, Chapter 4, Preferred and Alternative Methods for Estimating Air Emissions from Equipment Leaks.

2. The affected units addressed by this construction permit may be operated under this permit until final action is taken on the source's CAAPP permit.

If you have any questions on this permit, please contact Jason Schnepf at 217/782-2113.

Donald E. Sutton, P.E.
Manager, Permit Section
Division of Air Pollution Control

DES:JMS:

cc: Region